2. (Amended) A Method according to claim 1, wherein the gram-positive bacterium is one that contains at least one mycolic acid.

3. (Amended) A Method according to claim 2, wherein the bacterium is a mycobacterium, preferably *Mycobacterium smegmatis*.

4. (Amended) A Method according to claim 1, wherein the channel forming protein is a porin.

5. (Amended) A Method according to claim 4, wherein the porin is essentially chemically stable against organic solvents.

7. (Amended) A Method according to claim 1, wherein the porin is the porin MspA, MspC, MspD, a fragment of one of these porins, a homologous protein from one of these porins or their fragments, or a protein taken from a sequence of one of these porins.

8. (Amended) A Method according to claim 1, wherein the heterologous overexpression is realized in *E. coli* or mycobacteria.

9. (Amended) A Method according to claim 1, wherein a gene encoding a channel-forming protein, preferably a porin, is overexpressed.

10. (Amended) A Method according to claim 1, wherein an *mspA* gene according to sequence 1, an *mspC* gene according to sequence 6, or an *mspD* gene according to sequence 8 is overexpressed.

11. (Amended) A Method according to claim 10, wherein a mutant gene derived from the sequences 1, 6, or 8 is overexpressed, in which the mutation is essentially so that the chemical and thermal stability, as well as the channel-like structure, correspond essentially with that of MspA, MspC or MspD.

12. (Amended) A Method according to claim 11, wherein the mutation is essentially so that the codon usage of the *mspA*, *mspC* or *mspD* gene is adapted to that of highly expressed genes in *E. coli*.

13. (Amended) A Method according to claim 11, wherein a mutated *mspA*-, *mspC*- or *mspD* gene is used for overexpression where the mutation is essentially so that the G+C content is reduced to less than 66%.

14. (Amended) A Method according to claim 1, wherein the *synmspA* gene according to sequence 4 is overexpressed.

15. (Amended) A Method according to claim 14, wherein a suitable vector, containing the *synmspA* gene according to sequence 4, is used for overexpression in *E. coli*.

16. (Amended) A Method according to claim 1, wherein the channel-forming proteins are produced from the cell wall from gram-positive bacteria using non-ionic or zwitterionic detergents.

17. (Amended) A Method according to claim 16, wherein the detergents used come from the following list: isotridecylpoly(ethyleneglycolether)$_n$, alkylglucosides, especially octylglucoside, alkylmaltoside, especially dodecylmaltoside, alkylthioglucosides, especially octylthioglucoside, octyl-polyethylenoxide and lauryldimethylaminoxide.

18. (Amended) A Method according to claim 1, wherein the extraction temperature is between 80 and 110°C, preferably between 90 and 100°C.

19. (Amended) A Method according to claim 1, wherein the extraction time is 5-120 min, preferably 25-35 min.

20. (Amended) A Method according to claim 1, wherein a buffer with an ionic strength above 50 mM NaCl or Na-phosphate is used.

21. (Amended) A Method according to claim 1, wherein the channel-forming protein is purified by precipitation, particularly using acetone.

22. (Amended) A Method according to claim 1, wherein the channel-forming protein is purified using ion-exchange chromatography, particularly an anion-exchange chromatography.

23. (Amended) A Method according to claim 1, wherein the channel-forming protein is purified using size-exclusion chromatography.

24. (Amended) A Method according to claim 1, wherein the channel-forming protein, produced through heterologous overexpression by raising its local concentration, is renatured.

25. (Amended) A Method according to claim 24, wherein raising of the local protein concentration is realized by electrophoretic enrichment, especially by means of a DC current, by precipitation or adsorption at a suitable surface, especially at a membrane.

26. (Amended) Channel-forming protein from a gram-positive bacterium, produced according to a method according to claim 1.

32. (Amended) Gene, wherein the gene is the *mspA* gene according to sequence 1.

34. (Amended) Gene, wherein the gene is the *mspC* gene according to sequence 6.

35. (Amended) Gene, wherein the gene is the *mspD* gene according to sequence 8.

37. (Amended) Mutated *mspA* gene, *mspC* gene or *mspD* gene, according to claim 36, in which the mutation essentially consists of reducing the G+C content to less than 66%.

38. (Amended) Mutated *mspA* gene, *mspC* gene or *mspD* gene, according to claim 36, derived from one of the sequences 1, 6, or 8, in which the mutation is such that the chemical and thermal stability, as well as the channel-like structure of the protein is for all practical purposes that of MspA, MspC or MspD.